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Nitrogen Newsletter is a summary of recent publications, news and reports related to the cycling, effects and management of nitrogen. Prepared by Mary O'Brien, contractor with ASRC Federal Primus, and Jana Compton. Contact Jana Compton with any questions (Compton.jana@epa.gov)

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Special Issues

Gaertner-Mazouni N, De Wit R, eds. 2012. **Research and management for the conservation of coastal lagoon ecosystems.** Estuar Coast Shelf S 114. Available from:
<http://www.sciencedirect.com/science/journal/02727714/114>

Haygarth P, Jordan P, eds. 2012. **Catchment science and policy evaluation for agriculture and water quality.** Environ Sci Policy 24. Available from:
<http://www.sciencedirect.com/science/journal/14629011/24>

McConnell L, Hapeman C, Howard C, Hafner S, eds. 2013. **Agriculture and air quality: Emission measurement and modeling.** Atmos Environ 66. Available from:
<http://www.sciencedirect.com/science/journal/13522310/66>

Post WL, Venterea RT, eds. 2012. **Managing biogeochemical cycles to reduce greenhouse gases.** Front Ecol Environ 10(10). Available from: <http://www.esajournals.org/toc/fron/10/10>

Articles

Abit SM, Amoozegar A, Vepraskas MJ, Niewoehner CP. 2012. **Soil and hydrologic effects on fate and horizontal transport in the capillary fringe of surface-applied nitrate.** Geoderma 189: 343-350. Available from: <http://dx.doi.org/10.1016/j.geoderma.2012.05.029>

Aguilera E, Lassaletta L, Sanz-Cobena A, Garnier J, Vallejo A. 2013. **The potential of organic fertilizers and water management to reduce N₂O emissions in Mediterranean climate cropping systems. A review.** Agr Ecosyst Environ 164: 32-52. Available from: <http://dx.doi.org/10.1016/j.agee.2012.09.006>

Alam MJ, Dutta, D. 2013. **Predicting climate change impact on nutrient pollution in waterways: a case study in the upper catchment of the Latrobe River, Australia.** Ecohydrology 6(1): 73-82. Available from: <http://dx.doi.org/10.1002/eco.282>

Alam MJ, Dutta D. 2012. **A process-based and distributed model for nutrient dynamics in river basin: development, testing and applications.** Ecol Model 247: 112-124. Available from: <http://dx.doi.org/10.1016/j.ecolmodel.2012.07.031>

Alsterberg C, Sundback K, Hulth S. 2012. **Functioning of a shallow-water sediment system during experimental warming and nutrient enrichment.** PLoS One 7(12): e51503. Available from: <http://dx.doi.org/10.1371/journal.pone.0051503>

Ammann C, Wolff V, Marx O, Brummer C, Neftel A. 2012. **Measuring the biosphere-atmosphere exchange of total reactive nitrogen by eddy covariance.** Biogeosciences 9(11): 4247-4261. Available from: <http://dx.doi.org/10.5194/bg-9-4247-2012>

Arce MI, Gomez R, Suarez ML, Vidal-Abarca MR. 2013. **Denitrification rates and controlling factors in two agriculturally influenced temporary Mediterranean saline streams.** Hydrobiologia 700(1): 169-185. Available from: <http://dx.doi.org/10.1007/s10750-012-1228-4>

Argerich A, Johnson SL, Sebestyen SD, Rhoades CC, Greathouse E, Knoepp JD, Adams MB, Likens GE, Campbell JL, McDowell WH, Scatena FN, Ice GG. **Trends in stream nitrogen concentrations for forested reference catchments across the USA.** Environ Res Lett 8: 014039. Available from: <http://iopscience.iop.org/1748-9326/8/1/014039>

Atzberger C. 2013. **Advances in remote sensing of agriculture: context description, existing operational monitoring systems and major information needs.** Remote Sens-Basel 5(2): 949-981. Available from: <http://dx.doi.org/10.3390/rs5020949>

Augustine DJ, Milchunas DG, Derner JD. 2013. **Spatial redistribution of nitrogen by cattle in semiarid rangeland.** Rangeland Ecol Manag 66(1): 56-62. Available from: <http://dx.doi.org/10.2111/REM-D-11-00228.1>

Auro ME, Cochlan WP. 2013. **Nitrogen utilization and toxin production by two diatoms of the *Pseudo-nitzschia pseudodelicatissima* complex: *P. cuspidata* and *P. fribxelliana*.** J Phycol 49(1): 156-169. Available from: <http://dx.doi.org/10.1111/jpy.12033>

Auyeung DSN, Suseela V, Dukes JS. 2013. **Warming and drought reduce temperature sensitivity of nitrogen transformations.** Global Change Biol 19(2): 662-676. Available from: <http://dx.doi.org/10.1111/gcb.12063>

- Barreiro F, Gomez M, Lopez J, Lastra M, de la Huz R. 2013. **Coupling between macroalgal inputs and nutrients outcrop in exposed sandy beaches.** Hydrobiologia 700(1): 73-84. Available from: <http://dx.doi.org/10.1007/s10750-012-1220-z>
- Bartoli M, Castaldelli G, Nizzoli D, Viaroli P. 2012. **Benthic primary production and bacterial denitrification in a Mediterranean eutrophic coastal lagoon.** J Exp Mar Biol Ecol 438: 41-51. Available from: <http://dx.doi.org/10.1016/j.jembe.2012.09.011>
- Benedict KB, Day D, Schwandner FM, Kreidenweis SM, Schichtel B, Malm WC, Collett JL. 2013. **Observations of atmospheric reactive nitrogen species in Rocky Mountain National Park and across northern Colorado.** Atmos Environ 64: 66-76. Available from: <http://dx.doi.org/10.1016/j.atmosenv.2012.08.066>
- Biudes MS, Vourlitis GL. 2012. **Carbon and nitrogen mineralization of a semiarid shrubland exposed to experimental nitrogen deposition.** Soil Sci Soc Am J 76(6): 2068-2073. Available from: <http://dx.doi.org/10.2136/sssaj2012.0101n>
- Bjorkman MP, Kuhnel R, Partridge DG, Roberts TJ, Aas W, Mazzola M, Viola A, Hodson A, Strom J, Isaksson E. 2013. **Nitrate dry deposition in Svalbard.** Tellus B 65: 19071. Available from: <http://dx.doi.org/10.3402/tellusb.v65i0.19071>
- Blyth JM, Campbell DI, Schipper LA. 2013. **Utilizing soil indicators to explain historical vegetation changes of a peatland subjected to flood inundation.** Ecohydrology 6(1): 104-116. Available from: <http://dx.doi.org/10.1002/eco.1247>
- Botros FE, Onsoy YS, Ginn TR, Harter T. 2012. **Richards equation-based modeling to estimate flow and nitrate transport in a deep alluvial vadose zone.** Vadose Zone J 11(4). Available from: <http://dx.doi.org/10.2136/vzj2011.0145>
- Brandt-Williams S, Wigand C, Campbell DE. 2013. **Relationships between watershed energy flow and coastal New England salt marsh structure, function, and condition.** Environ Monit Assess 185(2): 1391-1412. Available from: <http://dx.doi.org/10.1007/s10661-012-2640-y>
- Brankatschk R, Fischer T, Veste M, Zeyer J. 2013. **Succession of N cycling processes in biological soil crusts on a Central European inland dune.** FEMS Microbiol Ecol 83(1): 149-160. Available from: <http://dx.doi.org/10.1111/j.1574-6941.2012.01459.x>
- Breuninger C, Meixner FX, Kesselmeier J. 2013. **Field investigations of nitrogen dioxide (NO₂) exchange between plants and the atmosphere.** Atmos Chem Phys 13(2): 773-790. Available from: <http://dx.doi.org/10.5194/acp-13-773-2013>
- Browne EC, Cohen RC. 2012. **Effects of biogenic nitrate chemistry on the NO_x lifetime in remote continental regions.** Atmos Chem Phys 12(24): 11917-11932. Available from: <http://dx.doi.org/10.5194/acp-12-11917-2012>

- Brummer C, Marx O, Kutsch W, Ammann C, Wolff V, Flechard CR, Freibauer A. 2013. **Fluxes of total reactive atmospheric nitrogen (Sigma N-r) using eddy covariance above arable land.** Tellus B 65: 19770. Available from: <http://dx.doi.org/10.3402/tellusb.v65i0.19770>
- Buckley C, Carney P. 2013. **The potential to reduce the risk of diffuse pollution from agriculture while improving economic performance at farm level.** Environ Sci Policy 25: 118-126. Available from: <http://dx.doi.org/10.1016/j.envsci.2012.10.002>
- Buckley C, Hynes S, Mechan S. 2012. **Supply of an ecosystem service-Farmers' willingness to adopt riparian buffer zones in agricultural catchments.** Environ Sci Policy 24(SI): 101-109. Available from: <http://dx.doi.org/10.1016/j.envsci.2012.07.022>
- Burford MA, Revill AT, Smith J, Clementson L. 2012. **Effect of sewage nutrients on algal production, biomass and pigments in tropical tidal creeks.** Mar Pollut Bull 64(12): 2671-2680. Available from: <http://dx.doi.org/10.1016/j.marpolbul.2012.10.008>
- Burkholder DA, Fourqurean JW, Heithaus MR. 2013. **Spatial pattern in seagrass stoichiometry indicates both N-limited and P-limited regions of an iconic P-limited subtropical bay.** Mar Ecol Prog Ser 472: 101-115. Available from: <http://dx.doi.org/10.3354/meps10042>
- Cameron KC, Di HJ, Moir JL. 2013. **Nitrogen losses from the soil/plant system: a review.** Ann Appl Biol 162(2): 145-173. Available from: <http://dx.doi.org/10.1111/aab.12014>
- Cape JN, Tang YS, Gonzalez-Benitez JM, Mitosinkova M, Makkonen U, Jocher M, Stolk A. 2012. **Organic nitrogen in precipitation across Europe.** Biogeosciences 9(11): 4401-4409. Available from: <http://dx.doi.org/10.5194/bg-9-4401-2012>
- Carey RO, Hochmuth GJ, Martinez CJ, Boyer TH, Dukes MD, Toor GS, Cisar JL. 2013. **Evaluating nutrient impacts in urban watersheds: challenges and research opportunities.** Environ Pollut 173: 138-149. Available from: <http://dx.doi.org/10.1016/j.envpol.2012.10.004>
- Carstensen J, Krause-Jensen D, Markager S, Timmermann K, Windolf J. 2013. **Water clarity and eelgrass responses to nitrogen reductions in the eutrophic Skive Fjord, Denmark.** Hydrobiologia 704(1): 293-309. Available from: <http://dx.doi.org/10.1007/s10750-012-1266-y>
- Castaldelli G, Colombani N, Vincenzi F, Mastrocicco M. 2013. **Linking dissolved organic carbon, acetate and denitrification in agricultural soils.** Environ Earth Sci 68(4): 939-945. Available from: <http://dx.doi.org/10.1007/s12665-012-1796-7>
- Ceulemans T, Merckx R, Hens M, Honnay O. 2013. **Plant species loss from European semi-natural grasslands following nutrient enrichment--is it nitrogen or is it phosphorus?** Global Ecol Biogeogr 22(1): 73-82. Available from: <http://dx.doi.org/10.1111/j.1466-8238.2012.00771.x>

- Chen WW, Zheng XH, Chen Q, Wolf B, Butterbach-Bahl K, Bruggemann N, Lin S. 2013. **Effects of increasing precipitation and nitrogen deposition on CH₄ and N₂O fluxes and ecosystem respiration in a degraded steppe in Inner Mongolia, China.** Geoderma 192: 335-340. Available from: <http://dx.doi.org/10.1016/j.geoderma.2012.08.018>
- Christodoulaki S, Petihakis G, Kanakidou M, Mihalopoulos N, Tsiaras K, Triantafyllou G. 2013. **Atmospheric deposition in the Eastern Mediterranean: a driving force for ecosystem dynamics.** J Marine Syst 109(SI): 78-93. Available from: <http://dx.doi.org/10.1016/j.jmarsys.2012.07.007>
- Collins JR, Raymond PA, Bohlen WF, Howard-Strobel MM. 2013. **Estimates of new and total productivity in central Long Island Sound from in situ measurements of nitrate and dissolved oxygen.** Estuar Coast 36(1): 74-97. Available from: <http://dx.doi.org/10.1007/s12237-012-9560-5>
- Cozzi S, Falconi C, Comici C, Cermelj B, Kovac N, Turk V, Giani M. 2012. **Recent evolution of river discharges in the Gulf of Trieste and their potential response to climate changes and anthropogenic pressure.** Estuar Coast Shelf S 115(SI): 14-24. Available from: <http://dx.doi.org/10.1016/j.ecss.2012.03.005>
- Crowe SA, Canfield DE, Mucci A, Sundby B, Maranger R. 2012. **Anammox, denitrification and fixed-nitrogen removal in sediments from the Lower St. Lawrence Estuary.** Biogeosciences 9(11): 4309-4321. Available from: <http://dx.doi.org/10.5194/bg-9-4309-2012>
- Curtis CJ, Heaton THE, Simpson GL, Evans CD, Shilland J, Turner S. 2012. **Dominance of biologically produced nitrate in upland waters of Great Britain indicated by stable isotopes.** Biogeochemistry 111(1-3): 535-554. Available from: <http://dx.doi.org/10.1007/s10533-011-9686-8>
- Dalgaard T, Bienkowski JF, Bleeker A, Dragosits U, Drouet JL, Durand P, Frumau A, Hutchings NJ, Kedziora A, Magliulo V, Olesen JE, Theobald MR, Maury O, Akkal N, Cellier P. 2012. **Farm nitrogen balances in six European landscapes as an indicator for nitrogen losses and basis for improved management.** Biogeosciences 9(12): 5303-5321. Available from: <http://dx.doi.org/10.5194/bg-9-5303-2012>
- Damgaard C, Ejrnaes R, Stevens CJ. 2013. **Intra-specific spatial aggregation in acidic grasslands: effects of acidification and nitrogen deposition on spatial patterns of plant communities.** J Veg Sci 24(1): 25-32. Available from: <http://dx.doi.org/10.1111/j.1654-1103.2012.01438.x>
- Danielewska A, Clarke N, Olejnik J, Hansen K, de Vries W, Lundin L, Tuovinen JP, Fischer R, Urbaniak M, Paoletti E. 2013. **A meta-database comparison from various European Research and Monitoring Networks dedicated to forest sites.** iForest 6:1-9. Available from: <http://dx.doi.org/10.3832/ifor0751-006>

Davidson K, Gowen RJ, Tett P, Bresnan E, Harrison PJ, McKinney A, Milligan S, Mills DK, Silke J, Crooks AM. 2012. **Harmful algal blooms: How strong is the evidence that nutrient ratios and forms influence their occurrence?** Estuar Coast Shelf S 115(SI): 399-413.

Available from: <http://dx.doi.org/10.1016/j.ecss.2012.09.019>

De Marco A, Scrpanti A, Attorre F, Proietti C, Vitale M. 2013. **Assessing ozone and nitrogen impact on net primary productivity with a Generalised non-Linear Model.** Environ Pollut 172: 250-263. Available from: <http://dx.doi.org/10.1016/j.envpol.2012.08.015>

Decock C, Six J. **An assessment of N-cycling and sources of N₂O during a simulated rain event using natural abundance N-15.** 2013. Agr Ecosyst Environ 165: 141-150. Available from: <http://dx.doi.org/10.1016/j.agee.2012.11.012>

Driscoll CT, Chen CY, Hammerschmidt CR, Mason RP, Gilmour CC, Sunderland EM, Greenfield BK, Buckman KL, Lamborg CH. 2012. **Nutrient supply and mercury dynamics in marine ecosystems: A conceptual model.** Environ Res 119(SI): 118-131. Available from: <http://dx.doi.org/10.1016/j.envres.2012.05.002>

Dugdale R, Wilkerson F, Parker AE, Marchi A, Taberski K. 2012. **River flow and ammonium discharge determine spring phytoplankton blooms in an urbanized estuary.** Estuar Coast Shelf S 115(SI): 187-199. Available from: <http://dx.doi.org/10.1016/j.ecss.2012.08.025>

Eickenscheidt N, Brumme R. 2013. **Contribution of N-15-labelled leaf litter to N turnover, nitrous oxide emissions and N sequestration in a beech forest during eleven years.** Plant Soil 362(1-2): 67-77. Available from: <http://dx.doi.org/10.1007/s11104-012-1245-0>

Eisenlord SD, Freedman Z, Zak DR, Xue K, He ZL, Zhou JZ. 2013. **Microbial mechanisms mediating increased soil C storage under elevated atmospheric N deposition.** Appl Environ Microb 79(4): 1191-1199. Available from: <http://dx.doi.org/10.1128/AEM.03156-12>

Evans SE, Burke IC. 2013. **Carbon and nitrogen decoupling under an 11-year drought in the shortgrass steppe.** Ecosystems 16(1): 20-33. Available from: <http://dx.doi.org/10.1007/s10021-012-9593-4>

Evju M, Bruteig IE. 2013. **Lichen community change over a 15-year time period: effects of climate and pollution.** Lichenologist 45(1): 35-50. Available from: <http://dx.doi.org/10.1017/S0024282912000539>

Fagundez J. 2013. **Heathlands confronting global change: drivers of biodiversity loss from past to future scenarios.** Ann Bot-London 111(2): 151-172. Available from: <http://dx.doi.org/10.1093/aob/mcs257>

Farrell M, Hill PW, Farrar J, DeLuca TH, Roberts P, Kielland K, Dahlgren R, Murphy DV, Hobbs PJ, Bardgett RD,

Jones DL. 2013. **Oligopeptides Represent a Preferred Source of Organic N Uptake: A**

Global Phenomenon? Ecosystems 16(1): 133-145. Available from:
<http://dx.doi.org/10.1007/s10021-012-9601-8>

Fender AC, Leuschner C, Schuetzenmeister K, Gansert D, Jungkunst HF. 2013. **Rhizosphere effects of tree species--large reduction of N₂O emission by saplings of ash, but not of beech, in temperate forest soil.** Eur J Soil Biol 54: 7-15. Available from:
<http://dx.doi.org/10.1016/j.ejsobi.2012.10.010>

Fertig B, O'Neil JM, Beckert KA, Cain CJ, Needham DM, Carruthers TJB, Dennison WC. 2013. **Elucidating terrestrial nutrient sources to a coastal lagoon, Chincoteague Bay, Maryland, USA.** Estuar Coast Shelf S 116(SI): 1-10. Available from:
<http://dx.doi.org/10.1016/j.ecss.2012.08.013>

Fertig B, Kennish MJ, Sakowicz GP. 2013. **Changing eelgrass (*Zostera marina L.*) characteristics in a highly eutrophic temperate coastal lagoon.** Aquat Bot 104: 70-79. Available from: <http://dx.doi.org/10.1016/j.aquabot.2012.09.004>

Ficklin DL, Luo YZ, Zhang MH. 2013. **Watershed modelling of hydrology and water quality in the Sacramento River watershed, California.** Hydrol Process 27(2): 236-250. Available from: <http://dx.doi.org/10.1002/hyp.9222>

Fleischer K, Rebel KT, van der Molen MK, Erisman JW, Wassen MJ, van Loon EE, Montagnani L, Gough CM, Herbst M, Janssens IA, Gianelle D, Dolman AJ. 2013. **The contribution of nitrogen deposition to the photosynthetic capacity of forests.** Global Biogeochem Cy 27(1): 187-199. Available from: <http://dx.doi.org/10.1002/gbc.20026>

Freppaz M, Williams MW, Seasteclt T, Filippa G. 2012. **Response of soil organic and inorganic nutrients in alpine soils to a 16-year factorial snow and N-fertilization experiment, Colorado Front Range, USA.** Appl Soil Ecol 62: 131-141. Available from:
<http://dx.doi.org/10.1016/j.apsoil.2012.06.006>

Fulweiler RW, Nixon SW. 2012. **Net sediment N-2 fluxes in a southern New England estuary: variations in space and time.** Biogeochemistry 111(1-3): 111-124. Available from:
<http://dx.doi.org/10.1007/s10533-011-9660-5>

Gao XP, Tenuta M, Nelson A, Sparling B, Tomasiewicz D, Mohr RM, Bizimungu B. 2013. **Effect of nitrogen fertilizer rate on nitrous oxide emission from irrigated potato on a clay loam soil in Manitoba, Canada.** Can J Soil Sci 93(1): 1-11. Available from:
<http://dx.doi.org/10.4141/CJSS2012-057>

Gibson MD, Heal MR, Li ZY, Kuchta J, King GH, Hayes A, Lambert S. 2013. **The spatial and seasonal variation of nitrogen dioxide and sulfur dioxide in Cape Breton Highlands National Park, Canada, and the association with lichen abundance.** Atmos Environ 64: 303-311. Available from: <http://dx.doi.org/10.1016/j.atmosenv.2012.09.068>

Glenn AJ, Tenuta M , Amiro BD, Maas SE, Wagner-Riddle C. 2012. **Nitrous oxide emissions from an annual crop rotation on poorly drained soil on the Canadian Prairies.** Agr Forest Meteorol 166: 41-49. Available from: <http://dx.doi.org/10.1016/j.agrformet.2012.06.015>

Gonzalez-Munoz N, Castro-Diez P, Parker IM. 2013. **Differences in nitrogen use strategies between native and exotic tree species: predicting impacts on invaded ecosystems.** Plant Soil 363(1-2): 319-329. Available from: <http://dx.doi.org/10.1007/s11104-012-1329-x>

Graeber D, Gelbrecht J, Kronvang B, Gucker B, Pusch MT, Zwirnmann E. 2012. **Technical Note: Comparison between a direct and the standard, indirect method for dissolved organic nitrogen determination in freshwater environments with high dissolved inorganic nitrogen concentrations.** Biogeosciences 9(11): 4873-4884. Available from: <http://dx.doi.org/10.5194/bg-9-4873-2012>

Grossmann M. 2012. **Economic value of the nutrient retention function of restored floodplain wetlands in the Elbe River basin.** Ecol Econ 83: 108-117. Available from: <http://dx.doi.org/10.1016/j.ecolecon.2012.03.008>

Guo RH, Zheng JQ, Han SJ, Zhang JH, Li MH. 2013. **Carbon and nitrogen turnover in response to warming and nitrogen addition during early stages of forest litter decomposition-an incubation experiment.** J Soil Sediment 13(2): 312-324. Available from: <http://dx.doi.org/10.1007/s11368-012-0630-x>

Hagg HE, Humborg C, Swaney DP, Morth CM. 2012. **Riverine nitrogen export in Swedish catchments dominated by atmospheric inputs.** Biogeochemistry 111(1-3): 203-217. Available from: <http://dx.doi.org/10.1007/s10533-011-9634-7>

Hall NS, Paerl HW, Peierls BL, Whipple AC, Rossignol KL. 2013. **Effects of climatic variability on phytoplankton community structure and bloom development in the eutrophic, microtidal, New River Estuary, North Carolina, USA.** Estuar Coast Shelf S 117: 70-82. Available from: <http://dx.doi.org/10.1016/j.ecss.2012.10.004>

Heathcote AJ, Filstrup CT, Downing JA. 2013. **Watershed sediment losses to lakes accelerating despite agricultural soil conservation efforts.** PLoS ONE 8(1): e53554. Available from: <http://dx.doi.org/10.1371/journal.pone.0053554>

Hertel O, Geels C, Frohn LM, Ellermann T, Skjøth CA, Lostrom P, Christensen JH, Andersen HV, Peel RG. 2013. **Assessing atmospheric nitrogen deposition to natural and semi-natural ecosystems--experience from Danish studies using the DAMOS.** Atmos Environ 66(SI): 151-160. Available from: <http://dx.doi.org/10.1016/j.atmosenv.2012.02.071>

Hertel O, Skjøth CA, Reis S, Bleeker A, Harrison RM, Cape JN, Fowler D, Skiba U, Simpson D, Jickells T, Kulmala M, Gyldenkaerne S, Sorensen LL, Erisman JW, Sutton MA. 2012. **Governing processes for reactive nitrogen compounds in the European atmosphere.** Biogeosciences 9(12): 4921-4954. Available from: <http://dx.doi.org/10.5194/bg-9-4921-2012>

Hirt U, Kreins P, Kuhn U, Mahnkopf J, Venohr M, Wendland F. 2012. **Management options to reduce future nitrogen emissions into rivers: a case study of the Weser river basin, Germany.** Agr Water Manage 115: 118-131. Available from: <http://dx.doi.org/10.1016/j.agwat.2012.08.005>

Hollister CC, Bisogni JJ, Lehmann J. 2013. **Ammonium, nitrate, and phosphate sorption to and solute leaching from biochars prepared from corn stover (*Zea mays L.*) and oak wood (*Quercus spp.*).** J Environ Qual 42(1): 137-144. Available from: <http://dx.doi.org/10.2134/jeq2012.0033>

Homeier J, Hertel D, Camenzind T, Cumbicus NL, Maraun M, Martinson GO, Poma LN, Rillig MC, Sandmann D, Scheu S, Veldkamp E, Wilcke W, Wullaert H, Leuschner C. 2012. **Tropical Andean forests are highly susceptible to nutrient inputs-rapid effects of experimental N and P addition to an Ecuadorian montane forest.** PLoS One 7(10): e47128. Available from: <http://dx.doi.org/10.1371/journal.pone.0047128>

Hongisto M. 2012. **Origin and possible effects of episodic nutrient deposition events over the Baltic Sea.** Int J Environ Pollut 50(1-4, SI): 293-307. Available from: <http://www.inderscience.com/info/inarticle.php?artid=51201>

Horvath H, Matyas K, Sule G, Presing M. 2013. **Contribution of nitrogen fixation to the external nitrogen load of a water quality control reservoir (Kis-Balaton Water Protection System, Hungary).** Hydrobiologia 702(1): 255-265. Available from: <http://dx.doi.org/10.1007/s10750-012-1329-0>

Hou EQ, Chen CR, McGroddy ME, Wen DZ. 2012. **Nutrient limitation on ecosystem productivity and processes of mature and old-growth subtropical forests in China.** PLoS One 7(12): e52071. Available from: <http://dx.doi.org/10.1371/journal.pone.0052071>

Huber B, Luster J, Bernasconi SM, Shrestha J, Pannatier EG. 2012. **Nitrate leaching from short-hydroperiod floodplain soils.** Biogeosciences 9(11): 4385-4397. Available from: <http://dx.doi.org/10.5194/bg-9-4385-2012>

Jung K, Choi WJ, Chang SX, Arshad MA. 2013. **Soil and tree ring chemistry of *Pinus banksiana* and *Populus tremuloides* stands as indicators of changes in atmospheric environments in the oil sands region of Alberta, Canada.** Ecol Indic 25: 256-265. Available from: <http://dx.doi.org/10.1016/j.ecolind.2012.10.006>

Karam SL, Weisberg PJ, Scheller RM, Johnson DW, Miller WW. 2013. **Development and evaluation of a nutrient cycling extension for the LANDIS-II landscape simulation model.** Ecol Model 250: 45-57. Available from: <http://dx.doi.org/10.1016/j.ecolmodel.2012.10.016>

Keller DP, Hood RR. 2013. **Comparative simulations of dissolved organic matter cycling in idealized oceanic, coastal, and estuarine surface waters.** J Marine Syst 109(SI): 109-128. Available from: <http://dx.doi.org/10.1016/j.jmarsys.2012.01.002>

- Kelly JJ, Peterson E, Winkelman J, Walter TJ, Rier ST, Tuchman NC. 2013. **Elevated atmospheric CO₂ impacts abundance and diversity of nitrogen cycling functional genes in soil.** *Microb Ecol* 65(2): 394-404. Available from: <http://dx.doi.org/10.1007/s00248-012-0122-y>
- Keuter A, Hoeft I, Veldkamp E, Corre MD. 2013. **Nitrogen response efficiency of a managed and phytodiverse temperate grassland.** *Plant Soil* 364(1-2): 193-206. Available from: <http://dx.doi.org/10.1007/s11104-012-1344-y>
- Kluber LA, Carrino-Kyker SR, Coyle KP, DeForest JL, Hewins CR, Shaw AN, Smemo KA, Burke DJ. 2012. **Mycorrhizal response to experimental pH and P manipulation in acidic hardwood forests.** *PLoS One* 7(11): e48946. Available from: <http://dx.doi.org/10.1371/journal.pone.0048946>
- Koehler B, Corre MD, Steger K, Well R, Zehe E, Sueta JP, Veldkamp E. 2012. **An in-depth look into a tropical lowland forest soil: nitrogen-addition effects on the contents of N₂O, CO₂ and CH₄ and N₂O isotopic signatures down to 2-m depth.** *Biogeochemistry* 111(1-3): 695-713. Available from: <http://dx.doi.org/10.1007/s10533-012-9711-6>
- Koehler B, Corre MD, Steger K, Well R, Zehe E, Sueta JP, Veldkamp E. 2012. **Erratum to: An in-depth look into a tropical lowland forest soil: nitrogen-addition effects on the contents of N₂O, CO₂ and CH₄ and N₂O isotopic signatures down to 2-m depth.** *Biogeochemistry* 111(1-3): 715-717. Available from: <http://dx.doi.org/10.1007/s10533-012-9780-6>
- Komarov AS, Shanin VN. 2012. **Comparative analysis of the influence of climate change and nitrogen deposition on carbon sequestration in forest ecosystems in European Russia: simulation modelling approach.** *Biogeosciences* 9(11): 4757-4770. Available from: <http://dx.doi.org/10.5194/bg-9-4757-2012>
- Korhonen JFJ, Pihlatie M, Pumpanen J, Aaltonen H, Hari P, Levula J, Kieloaho AJ, Nikinmaa E, Vesala T, Ilvesniemi H. 2013. **Nitrogen balance of a boreal Scots pine forest.** *Biogeosciences* 10(2): 1083-1095. Available from: <http://dx.doi.org/10.5194/bg-10-1083-2013>
- Kranabetter JM, Saunders S, MacKinnon JA, Klassen H, Spittlehouse DL. 2013. **An assessment of contemporary and historic nitrogen availability in contrasting coastal douglas-fir forests through delta N-15 of tree rings.** *Ecosystems* 16(1): 111-122. Available from: <http://dx.doi.org/10.1007/s10021-012-9598-z>
- Kros J, Heuvelink GBM, Reinds GJ, Lesschen JP, Ioannidi V, De Vries W. 2012. **Uncertainties in model predictions of nitrogen fluxes from agro-ecosystems in Europe.** *Biogeosciences* 9(11): 4573-4588. Available from: <http://dx.doi.org/10.5194/bg-9-4573-2012>
- Kruit RJW, Schaap M, Sauter FJ, van Zanten MC, van Pul WAJ. 2012. **Modeling the distribution of ammonia across Europe including bi-directional surface-atmosphere exchange.** *Biogeosciences* 9(12): 5261-5277. Available from: <http://dx.doi.org/10.5194/bg-9-5261-2012>

Lackovicova A, Guttova A, Backor M, Pisut P, Pisut I. 2013. **Response of Evernia prunastri to urban environmental conditions in Central Europe after the decrease of air pollution.** Lichenologist 45(1): 89-100. Available from: <http://dx.doi.org/10.1017/S002428291200062X>

Land LS. 2012. **Chesapeake Bay nutrient pollution: contribution from the land application of sewage sludge in Virginia.** Mar Pollut Bull 64(11): 2305-2308. Available from: <http://dx.doi.org/10.1016/j.marpolbul.2012.07.003>

Lapointe BE, Herren LW, Bedford BJ. 2012. **Effects of hurricanes, land use, and water management on nutrient and microbial pollution: St. Lucie Estuary, Southeast Florida.** J Coastal Res 28(6): 1345-1361. Available from: <http://dx.doi.org/10.2112/JCOASTRES-D-12-00070.1>

Larson JH, Richardson WB, Vallazza JM, Nelson JC. 2012. **An exploratory investigation of the landscape-lake interface: land cover controls over consumer N and C isotopic composition in Lake Michigan rivermouths.** J Great Lakes Res 38(4): 610-619. Available from: <http://dx.doi.org/10.1016/j.jglr.2012.09.016>

Lasso E, Ackerman JD. 2013. **Nutrient limitation restricts growth and reproductive output in a tropical montane cloud forest bromeliad: findings from a long-term forest fertilization experiment.** Oecologia 171(1): 165-174. Available from: <http://dx.doi.org/10.1007/s00442-012-2403-z>

Laurent A, Fennel K, Hu J, Hetland R. 2012. **Simulating the effects of phosphorus limitation in the Mississippi and Atchafalaya River plumes.** Biogeosciences 9(11): 4707-4723. Available from: <http://dx.doi.org/10.5194/bg-9-4707-2012>

Leon LF, Smith REH, Malkin SY, Depew D, Hipsey MR, Antenucci JP, Higgins SN, Hecky RE, Rao RY. 2012. **Nested 3D modeling of the spatial dynamics of nutrients and phytoplankton in a Lake Ontario nearshore zone.** J Great Lakes Res 38(4, SI): 171-183. Available from: <http://dx.doi.org/10.1016/j.jglr.2012.02.006>

Lewis DB, Kaye JP. 2012. **Inorganic nitrogen immobilization in live and sterile soil of old-growth conifer and hardwood forests: implications for ecosystem nitrogen retention.** Biogeochemistry 111(1-3): 169-186. Available from: <http://dx.doi.org/10.1007/s10533-011-9627-6>

Li X, Tang CY, Han ZW, Cao YJ, Zhang CP. 2013. **Relation between nitrous oxide production in wetland and groundwater: a case study in the headwater wetland.** Paddy Water Environ 11(1-4): 521-529. Available from: <http://dx.doi.org/10.1007/s10333-012-0345-z>

Lin S, Jones R, Pantea C, Ozkaynak H, Rao ST, Hwang SA, Garcia VC. 2013. **Impact of NOx emissions reduction policy on hospitalizations for respiratory disease in New York State.** J Expo Sci Env Epid 23(1): 73-80. Available from: <http://dx.doi.org/10.1038/jes.2012.69>

- Liu DY, Shen XH, Di BP, Shi YJ, Keesing JK, Wang YJ, Wang YQ. 2013. **Palaeoecological analysis of phytoplankton regime shifts in response to coastal eutrophication.** Mar Ecol Prog Ser 475: 1-14. Available from: <http://dx.doi.org/10.3354/meps10234>
- Liu JX, Huang WJ, Zhou GY, Zhang DQ, Liu SZ, Li YY. 2013. **Nitrogen to phosphorus ratios of tree species in response to elevated carbon dioxide and nitrogen addition in subtropical forests.** Global Change Biol 19(1): 208-216. Available from: <http://dx.doi.org/10.1111/gcb.12022>
- Liu X, Zhang Y, Han W, Tang A, Shen J, Cui Z, Vitousek P, Erisman JW, Goulding K, Christie P, Fangmeier A, Zhang F. 2013. **Enhanced nitrogen deposition over China.** Nature 494(7438): 459-462. Available from: <http://dx.doi.org/10.1038/nature11917>
- Long A, Heitman J, Tobias C, Philips R, Song B. 2013. **Co-occurring anammox, denitrification, and codenitrification in agricultural soils.** Appl Environ Microb 79(1): 168-176. Available from: <http://dx.doi.org/10.1128/AEM.02520-12>
- Lu CQ, Tian HQ. 2013. **Net greenhouse gas balance in response to nitrogen enrichment: perspectives from a coupled biogeochemical model.** Global Change Biol 19(2): 571-588. Available from: <http://dx.doi.org/10.1111/gcb.12049>
- Lubbers IM, van Groenigen KJ, Fonte SJ, Six J, Brussaard L, van Groenigen JW. 2013. **Greenhouse-gas emissions from soils increased by earthworms.** Nat Clim Change 3: 187-194. Available from: <http://dx.doi.org/10.1038/nclimate1692>
- Majeed MZ, Miambi E, Robert A, Bernoux M, Brauman A. 2012. **Xylophagous termites: a potential sink for atmospheric nitrous oxide.** Eur J Soil Biol 53: 121-125. Available from: <http://dx.doi.org/10.1016/j.ejsobi.2012.10.002>
- Mao R, Song CC, Zhang XH, Wang XW, Zhang ZH. 2013. **Response of leaf, sheath and stem nutrient resorption to 7 years of N addition in freshwater wetland of Northeast China.** Plant Soil 364(1-2): 385-394. Available from: <http://dx.doi.org/10.1007/s11104-012-1370-9>
- Marchetto A, Rogora M, Arisci S. 2013. **Trend analysis of atmospheric deposition data: a comparison of statistical approaches.** Atmos Environ 64: 95-102. Available from: <http://dx.doi.org/10.1016/j.atmosenv.2012.08.020>
- McLauchlan KK, Williams JJ, Craine JM, Jeffers, ES. 2013. **Changes in global nitrogen cycling during the Holocene epoch.** Nature 495(7441): 352-355. Available from: <http://dx.doi.org/10.1038/nature11916>
- Meyer A, Grote R, Butterbach-Bahl K. 2012. **Integrating mycorrhiza in a complex model system: effects on ecosystem C and N fluxes.** Eur J Forest Res 131(6): 1809-1831. Available from: <http://dx.doi.org/10.1007/s10342-012-0634-5>

Mineau MM, Rigsby CM, Ely DT, Fernandez IJ, Norton SA, Ohno T, Valett HM, Simon KS. 2013. **Chronic catchment nitrogen enrichment and stoichiometric constraints on the bioavailability of dissolved organic matter from leaf leachate.** Freshwater Biol 58(2): 248-260. Available from: <http://dx.doi.org/10.1111/fwb.12054>

Morgan RP, Kline KM, Churchill JB. 2013. **Estimating reference nutrient criteria for Maryland ecoregions.** Environ Monit Assess 185(3): 2123-2137. Available from: <http://dx.doi.org/10.1007/s10661-012-2694-x>

Naoko T, Nobuhito O, Ken'ichi O, Masanori K. 2013. **Separate estimation of N export into baseline N leakage without disturbance and N loss due to insect defoliation in a pine forest watershed in central Japan.** Environ Monit Assess 185(1): 855-863. Available from: <http://dx.doi.org/10.1007/s10661-012-2596-y>

Nelson CE, Bennett DM, Cardinale BJ. 2013. **Consistency and sensitivity of stream periphyton community structural and functional responses to nutrient enrichment.** Ecol Appl 23(1): 159-173. Available from: <http://dx.doi.org/10.1890/12-0295.1>

Newcomer TA, Kaushal SS, Mayer PM, Shields AR, Canuel EA, Groffman PM, Gold AJ. 2012. **Influence of natural and novel organic carbon sources on denitrification in forest, degraded urban, and restored streams.** Ecol Monogr 82(4): 449-466. Available from: <http://dx.doi.org/10.5061/dryad.4gk00>

Newingham BA, Vanier CH, Charlet TN, Smith SD. 2012. **Effects of enhanced summer monsoons, nitrogen deposition and soil disturbance on Larrea tridentata productivity and subsequent herbivory in the Mojave Desert.** J Arid Environ 87: 19-28. Available from: <http://dx.doi.org/10.1016/j.jaridenv.2012.07.002>

Noe GB, Hupp CR, Rybicki NB. 2013. **Hydrogeomorphology influences soil nitrogen and phosphorus mineralization in floodplain wetlands.** Ecosystems 16(1): 75-94. Available from: <http://dx.doi.org/10.1007/s10021-012-9597-0>

Omand MM, Feddersen F, Guza RT, Franks PJS. 2012. **Episodic vertical nutrient fluxes and nearshore phytoplankton blooms in Southern California.** Limnol Oceanogr 57(6): 1673-1688. Available from: <http://dx.doi.org/10.4319/lo.2012.57.6.1673>

Pang ZH, Yuan LJ, Huang TM, Kong YL, Liu JL, Li YM. 2013. **Impacts of human activities on the occurrence of groundwater nitrate in an alluvial plain: a multiple isotopic tracers approach.** J Earth Sci-China 24(1): 111-124. Available from: <http://dx.doi.org/10.1007/s12583-013-0310-9>

Pare MC, Bedard-Haughn A. 2012. **Landscape-scale N mineralization and greenhouse gas emissions in Canadian Cryosols.** Geoderma 189: 469-479. Available from: <http://dx.doi.org/10.1016/j.geoderma.2012.06.002>

Passeport E, Vidon P, Forshay KJ, Harris L, Kaushal SS, Kellogg DQ, Lazar J, Mayer P, Stander EK. 2013. **Ecological engineering practices for the reduction of excess nitrogen in human-influenced landscapes: a guide for watershed managers.** Environ Manage 51(2): 392-413. Available from: <http://dx.doi.org/10.1007/s00267-012-9970-y>

Payne RJ, Dise NB, Stevens CJ, Gowing DJ. 2013. **Impact of nitrogen deposition at the species level.** PNAS 110(3): 984-987. Available from: <http://dx.doi.org/10.1073/pnas.1214299109>

Payne RJ, Caporn SJM, Stevens CJ, Carroll JA, Edmondson JL, Gowing DJ, Dise NB. 2013. **Inferring nitrogen deposition from plant community composition.** Ecol Indic 26: 1-4. Available from: <http://dx.doi.org/10.1016/j.ecolind.2012.10.013>

Perring MP, Standish RJ, Hulvey KB, Lach L, Morald TK, Parsons R, Didham RK, Hobbs RJ. 2012. **The Ridgefield Multiple Ecosystem Services Experiment: can restoration of former agricultural land achieve multiple outcomes?** Agr Ecosyst Environ 163(SI): 14-27. Available from: <http://dx.doi.org/10.1016/j.agee.2012.02.016>

Peter S, Rechsteiner R, Lehmann MF, Brankatschk R, Vogt T, Diem S, Wehrli B, Tockner K, Durisch-Kaiser E. 2012. **Nitrate removal in a restored riparian groundwater system: functioning and importance of individual riparian zones.** Biogeosciences 9(11): 4295-4307. Available from: <http://dx.doi.org/10.5194/bg-9-4295-2012>

Peterson EW, Benning C. 2013. **Factors influencing nitrate within a low-gradient agricultural stream.** Environ Earth Sci 68(5): 1233-1245. Available from: <http://dx.doi.org/10.1007/s12665-012-1821-x>

Philibert A, Loyce C, Makowski D. 2012. **Quantifying uncertainties in N₂O emission due to N fertilizer application in cultivated areas.** PLoS One 7(11): e50950. Available from: <http://dx.doi.org/10.1371/journal.pone.0050950>

Piggott JJ, Lange K, Townsend CR, Matthaei CD. 2012. **Multiple stressors in agricultural streams: A mesocosm study of interactions among raised water temperature, sediment addition and nutrient enrichment.** PLoS One 7(11): e49873. Available from: <http://dx.doi.org/10.1371/journal.pone.0049873>

Regina K, Kaseva J, Esala M. 2013. **Emissions of nitrous oxide from boreal agricultural mineral soils--statistical models based on measurements.** Agr Ecosyst Environ 164: 131-136. Available from: <http://dx.doi.org/10.1016/j.agee.2012.09.013>

Reinds GJ, Heuvelink GBM, Hoogland T, Kros J, de Vries W. 2012. **Estimating nitrogen fluxes at the European scale by upscaling INTEGRATOR model outputs from selected sites.** Biogeosciences 9(11): 4527-4536. Available from: <http://dx.doi.org/10.5194/bg-9-4527-2012>

Revell LE, Bodeker GE, Huck PE, Williamson BE, Rozanov E. 2012. **The sensitivity of stratospheric ozone changes through the 21st century to N₂O and CH₄.** Atmos Chem Phys 12(23): 11309-11317. Available from: <http://dx.doi.org/10.5194/acp-12-11309-2012>

Rhoades CC, McCutchan JH, Cooper LA, Clow D, Detmer TM, Briggs JS, Stednick JD, Veblen TT, Ertz RM, Likens GE, Lewis WM. 2013. **Biogeochemistry of beetle-killed forests: explaining a weak nitrate response.** PNAS 110(5): 1756-1760. Available from: <http://dx.doi.org/10.1073/pnas.1221029110>

Rojas ALP, Venegas LE. 2013. **Upgrade of the DAUMOD atmospheric dispersion model to estimate urban background NO₂ concentrations.** Atmos Res 120: 147-154. Available from: <http://dx.doi.org/10.1016/j.atmosres.2012.08.010>

Roper JD, Burton DL, Madani A, Stratton GW. 2013. **A simple method for quantifying dissolved nitrous oxide in tile drainage water.** Can J Soil Sci 93(1): 59-64. Available from: <http://dx.doi.org/10.4141/CJSS2012-021>

Rosso JJ, Cirelli AF. 2013. **Effects of land use on environmental conditions and macrophytes in prairie lotic ecosystems.** Limnologica 43(1): 18-26. Available from: <http://dx.doi.org/10.1016/j.limno.2012.06.001>

Sanford RA, Wagner DD, Wu QZ, Chee-Sanford JC, Thomas SH, Cruz-Garcia C, Rodriguez G, Massol-Deya A, Krishnani KK, Ritalahti KM, Nissen S, Konstantinidis KT, Loffler FE. 2012. **Unexpected nondenitrifier nitrous oxide reductase gene diversity and abundance in soils.** P Natl Acad Sci USA 109(48): 19709-19714. Available from: <http://dx.doi.org/10.1073/pnas.1211238109>

Santos IR, de Weys J, Tait DR, Eyre BD. 2013. **The contribution of groundwater discharge to nutrient exports from a coastal catchment: post-flood seepage increases estuarine N/P ratios.** Estuar Coast 36(1): 56-73. Available from: <http://dx.doi.org/10.1007/s12237-012-9561-4>

Sardans J, Penuelas J. 2012. **The role of plants in the effects of global change on nutrient availability and stoichiometry in the plant-soil system.** Plant Physiol 160(4): 1741-1761. Available from: <http://dx.doi.org/10.1104/pp.112.208785>

Seftigen K, Moldan F, Linderholm HW. 2013. **Radial growth of Norway spruce and Scots pine: effects of nitrogen deposition experiments.** Eur J Forest Res 132(1): 83-92. Available from: <http://dx.doi.org/10.1007/s10342-012-0657-y>

Shen JL, Li Y, Liu XJ, Luo XS, Tang H, Zhang YZ, Wu JS. 2013. **Atmospheric dry and wet nitrogen deposition on three contrasting land use types of an agricultural catchment in subtropical central China.** Atmos Environ 67: 415-424. Available from: <http://dx.doi.org/10.1016/j.atmosenv.2012.10.068>

Sheng WP, Yu GR, Jiang CM, Yan JH, Liu YF, Wang SL, Wang B, Zhang JH, Wang CK, Zhou M, Jia BR. 2013. **Monitoring nitrogen deposition in typical forest ecosystems along a large**

transect in China. Environ Monit Assess 185(1): 833-844. Available from: <http://dx.doi.org/10.1007/s10661-012-2594-0>

Sheppard LJ, Leith ID, Leeson SR, van Dijk N, Field C, Levy P. 2013. **Fate of N in a peatland, Whim bog: immobilisation in the vegetation and peat, leakage into pore water and losses as N₂O depend on the form of N.** Biogeosciences 10(1): 149-160. Available from: <http://dx.doi.org/10.5194/bg-10-149-2013>

Siemens JA, Zwiazek JJ. 2013. **Effects of nitrate and ammonium on water relations of trembling aspen seedlings in solution culture.** J Plant Nutr 36(3): 372-389. Available from: <http://dx.doi.org/10.1080/01904167.2012.744039>

Simpson LT, Feller IC, Chapman SK. 2013. **Effects of competition and nutrient enrichment on Avicennia germinans in the salt marsh-mangrove ecotone.** Aquat Bot 104: 55-59. Available from: <http://dx.doi.org/10.1016/j.aquabot.2012.09.006>

Singh A, Jakubowski AR, Chidister I, Townsend PA. 2013. **A MODIS approach to predicting stream water quality in Wisconsin.** Remote Sens Environ 128: 74-86. Available from: <http://dx.doi.org/10.1016/j.rse.2012.10.001>

Skjoth CA, Geels C. 2013. **The effect of climate and climate change on ammonia emissions in Europe.** Atmos Chem Phys 13(1): 117-128. Available from: <http://dx.doi.org/10.5194/acp-13-117-2013>

Slemmons KEH, Saros JE. 2012. **Implications of nitrogen-rich glacial meltwater for phytoplankton diversity and productivity in alpine lakes.** Limnol Oceanogr 57(6): 1651-1663. Available from: <http://dx.doi.org/10.4319/lo.2012.57.6.1651>

Smith CM, David MB, Mitchell CA, Masters MD, Anderson-Teixeira KJ, Bernacchi CJ, DeLucia EH. 2013. **Reduced nitrogen losses after conversion of row crop agriculture to perennial biofuel crops.** J Environ Qual 42(1): 219-228. Available from: <http://dx.doi.org/10.2134/jeq2012.0210>

Smith I, Schallenberg M. 2013. **Occurrence of the agricultural nitrification inhibitor, dicyandiamide, in surface waters and its effects on nitrogen dynamics in an experimental aquatic system.** Agr Ecosyst Environ 164: 23-31. Available from: <http://dx.doi.org/10.1016/j.agee.2012.09.002>

Smithwick EAH, Eissenstat DM, Lovett GM, Bowden RD, Rustad LE, Driscoll CT. 2013. **Root stress and nitrogen deposition: consequences and research priorities.** New Phytol 197(3): 712-719. Available from: <http://dx.doi.org/10.1111/nph.12081>

Smyth AR, Thompson SP, Siporin KN, Gardner WS, McCarthy MJ, Piehler, MF. 2013. **Assessing nitrogen dynamics throughout the estuarine landscape.** Estuar Coast 36(1): 44-55. Available from: <http://dx.doi.org/10.1007/s12237-012-9554-3>

- Snyder CS, Fixen PE. 2012. **Plant nutrient management and risks of nitrous oxide emission.** J Soil Water Conserv 67(5): 137A-144A. Available from: <http://dx.doi.org/10.2489/jswc.67.5.137A>
- Sobota DJ, Compton JE, Harrison JA. 2013. **Reactive nitrogen inputs to US lands and waterways: how certain are we about sources and fluxes?** Front Ecol Environ 11(2): 82-90. Available from: <http://dx.doi.org/10.1890/110216>
- Sparrius LB, Kooijman AM. 2013. **Nitrogen deposition and soil carbon content affect nitrogen mineralization during primary succession in acid inland drift sand vegetation.** Plant Soil 364(1-2): 219-228. Available from: <http://dx.doi.org/10.1007/s11104-012-1351-z>
- Sparrius LB, Kooijman AM, Sevink J. 2013. **Response of inland dune vegetation to increased nitrogen and phosphorus levels.** Appl Veg Sci 16(1): 40-50. Available from: <http://dx.doi.org/10.1111/j.1654-109X.2012.01206.x>
- Stewart KJ, Brummell ME, Coxson DS, Siciliano SD. 2013. **How is nitrogen fixation in the high arctic linked to greenhouse gas emissions?** Plant Soil 362(1-2): 215-229. Available from: <http://dx.doi.org/10.1007/s11104-012-1282-8>
- Stockle C, Higgins S, Kemanian A, Nelson R, Huggins D, Marcos J, Collins H. 2012. **Carbon storage and nitrous oxide emissions of cropping systems in eastern Washington: a simulation study.** J Soil Water Conserv 67(5): 365-377. Available from: <http://dx.doi.org/10.2489/jswc.67.5.365>
- Strokal M, Kroeze C. 2013. **Nitrogen and phosphorus inputs to the Black Sea in 1970-2050.** Reg Environ Change 13(1): 179-192. Available from: <http://dx.doi.org/10.1007/s10113-012-0328-z>
- Su JQ, Li XR, Li XJ, Feng L. 2013. **Effects of additional N on herbaceous species of desertified steppe in arid regions of China: a four-year field study.** Ecol Res 28(1): 21-28. Available from: <http://dx.doi.org/10.1007/s11284-012-0994-9>
- Sullivan FB, Ollinger SV, Martin ME, Ducey MJ, Lepine LC, Wicklein HF. 2013. **Foliar nitrogen in relation to plant traits and reflectance properties of New Hampshire forests.** Can J Forest Res 43(1): 18-27. Available from: <http://dx.doi.org/10.1139/cjfr-2012-0324>
- Sullivan TJ. 2012. **Combining ecosystem service and critical load concepts for resource management and public policy.** Water 4(4): 905-913. Available from: <http://dx.doi.org/10.3390/w4040905>
- Teichberg M, Fricke A, Bischof K. 2013. **Increased physiological performance of the calcifying green macroalga Halimeda opuntia in response to experimental nutrient enrichment on a Caribbean coral reef.** Aquat Bot 104: 25-33. Available from: <http://dx.doi.org/10.1016/j.aquabot.2012.09.010>

Teixeira C, Magalhaes C, Joye SB, Bordalo AA. 2013. **The role of salinity in shaping dissolved inorganic nitrogen and N₂O dynamics in estuarine sediment-water interface.** Mar Pollut Bull 66(1-2): 225-229. Available from: <http://dx.doi.org/10.1016/j.marpolbul.2012.11.004>

Tipping E, Rowe EC, Evans CD, Mills RTE, Emmett BA, Chaplow JS, Hall JR. 2012. **N14C: a plant-soil nitrogen and carbon cycling model to simulate terrestrial ecosystem responses to atmospheric nitrogen deposition.** Ecol Model 247: 11-26. Available from: <http://dx.doi.org/10.1016/j.ecolmodel.2012.08.002>

Tsugeki NK, Agusa T, Ueda S, Kuwae M, Oda H, Tanabe S, Tani Y, Toyoda K, Wang WL, Urabe J. 2012. **Eutrophication of mountain lakes in Japan due to increasing deposition of anthropogenically produced dust.** Ecol Res 27(6): 1041-1052. Available from: <http://dx.doi.org/10.1007/s11284-012-0984-y>

Turlapati SA, Minocha R, Bhiravarasa PS, Tisa LS, Thomas WK, Minocha SC. 2013 **Chronic N-amended soils exhibit an altered bacterial community structure in Harvard Forest, MA, USA.** FEMS Microbiol Ecol 83(2): 478-493. Available from: <http://dx.doi.org/10.1111/1574-6941.12009>

Turner RE, Rabalais NN. 2013. **Nitrogen and phosphorus phytoplankton growth limitation in the northern Gulf of Mexico.** Aquat Microb Ecol 68(2): 159-169. Available from: <http://dx.doi.org/10.3354/ame01607>

van Dijk J, Robroek B, Kardel I, Wassen M. 2012. **Combined effects of nitrogen enrichment, sulphur pollution and climate change on fen meadow vegetation N:P stoichiometry and biomass.** Biogeochemistry 111(1-3): 139-150. Available from: <http://dx.doi.org/10.1007/s10533-011-9694-8>

van Grinsven HJM, ten Berge HFM, Dalgaard T, Fraters B, Durand P, Hart A, Hofman G, Jacobsen BH, Lalor STJ, Lesschen JP, Osterburg B, Richards KG, Techens AK, Vertes F, Webb J, Willems WJ. 2012. **Management, regulation and environmental impacts of nitrogen fertilization in northwestern Europe under the Nitrates Directive: a benchmark study.** Biogeosciences 9(12): 5143-5160. Available from: <http://dx.doi.org/10.5194/bg-9-5143-2012>

van Kessel C, Venterea R, Six J, Adviento-Borbe MA, Linquist B, van Groenigen KJ. 2013. **Climate, duration, and N placement determine N₂O emissions in reduced tillage systems: a meta-analysis.** Global Change Biol 19(1): 33-44. Available from: <http://dx.doi.org/10.1111/j.1365-2486.2012.02779.x>

Van Sickle J. 2013. **Estimating the risks of multiple, covarying stressors in the National Lakes Assessment.** Freshw Sci 32(1): 204-216. Available from: <http://dx.doi.org/10.1899/11-050.1>

Verburg PSJ, Young AC, Stevenson BA, Glanzmann I, Arnone JA, Marion GM, Holmes C, Nowak RS. 2013. **Do increased summer precipitation and N deposition alter fine root**

dynamics in a Mojave Desert ecosystem? Global Change Biol 19(3): 948-956. Available from: <http://dx.doi.org/10.1111/gcb.12082>

Vieillard AM, Fulweiler RW. 2012. **Impacts of long-term fertilization on salt marsh tidal creek benthic nutrient and N₂ gas fluxes.** Mar Ecol Prog Ser 471: 11-22. Available from: <http://dx.doi.org/10.3354/meps10013>

Vienneau D, Briggs DJ. 2013. **Delimiting affinity zones as a basis for air pollution mapping in Europe.** Environ Int 51: 106-115. Available from: <http://dx.doi.org/10.1016/j.envint.2012.10.012>

Vilain G, Garnier J, Tallec G, Tournebize J. 2012. **Indirect N₂O emissions from shallow groundwater in an agricultural catchment (Seine Basin, France).** Biogeochemistry 111(1-3): 253-271. Available from: <http://dx.doi.org/10.1007/s10533-011-9642-7>

Vogt E, Braban CF, Dragosits U, Theobald MR, Billett MF, Dore AJ, Tang YS, van Dijk N, Rees RM, McDonald C, Murray S, Skiba UM, Sutton MA. 2013. **Estimation of nitrogen budgets for contrasting catchments at the landscape scale.** Biogeosciences 10(1): 119-133. Available from: <http://dx.doi.org/10.5194/bg-10-119-2013>

Voss M, Hietanen S. 2013. **Biogeochemistry: the depths of nitrogen cycling.** Nature 493(7434): 616-618. Available from: <http://dx.doi.org/10.1038/493616a>

Walker JM, Philip S, Martin RV, Seinfeld JH. 2012. **Simulation of nitrate, sulfate, and ammonium aerosols over the United States.** Atmos Chem Phys 12(22): 11213-11227. Available from: <http://dx.doi.org/10.5194/acp-12-11213-2012>

Wall DP, Murphy PNC, Melland AR, Mechan S, Shine O, Buckley C, Mellander PE, Shortle G, Jordan P. 2012. **Evaluating nutrient source regulations at different scales in five agricultural catchments.** Environ Sci Policy 24(SI): 34-43. Available from: <http://dx.doi.org/10.1016/j.envsci.2012.06.007>

Wang L, Ibrom A, Korhonen JFJ, Frumau KFA Wu J, Pihlatie M, Schjoerring JK. 2013. **Interactions between leaf nitrogen status and longevity in relation to N cycling in three contrasting European forest canopies.** Biogeosciences 10(2): 999-1011. Available from: <http://dx.doi.org/10.5194/bg-10-999-2013>

Wang R, Feng Q, Liao TT, Zheng XH, Butterbach-Bahl K, Zhang W, Jin CY. 2013. **Effects of nitrate concentration on the denitrification potential of a calcic cambisol and its fractions of N₂, N₂O and NO.** Plant Soil 363(1-2): 175-189. Available from: <http://dx.doi.org/10.1007/s11104-012-1264-x>

Wang ZY, Zheng H, Luo Y, Deng X, Herbert S, Xing BS. 2013. **Characterization and influence of biochars on nitrous oxide emission from agricultural soil.** Environ Pollut 174: 289-296. Available from: <http://dx.doi.org/10.1016/j.envpol.2012.12.003>

White P, Ruble CL, Lane ME. 2013. **The effect of changes in land use on nitrate concentration in water supply wells in southern Chester County, Pennsylvania.** Environ Monit Assess 185(1): 643-651. Available from: <http://dx.doi.org/10.1007/s10661-012-2581-5>

Windolf J, Blicher-Mathiesen G, Carstensen J, Kronvang B. 2012. **Changes in nitrogen loads to estuaries following implementation of governmental action plans in Denmark: a paired catchment and estuary approach for analysing regional responses.** Environ Sci Policy 24(SI): 24-33. Available from: <http://dx.doi.org/10.1016/j.envsci.2012.08.009>

Wohlfart T, Exbrayat JF, Schelde K, Christen B, Dalgaard T, Frede HG, Breuer L. 2012. **Spatial distribution of soils determines export of nitrogen and dissolved organic carbon from an intensively managed agricultural landscape.** Biogeosciences 9(11): 4513-4525. Available from: <http://dx.doi.org/10.5194/bg-9-4513-2012>

Wuytack T, Verheyen K, Wuyts K, Adriaenssens S, Staelens J, Samson R. 2013. **The use of leaf characteristics of common oak (*Quercus robur L.*) to monitor ambient ammonia concentrations.** Water Air Soil Poll 224(1): 1356. Available from: <http://dx.doi.org/10.1007/s11270-012-1356-5>

Xu ZW, Wan SQ, Ren HY, Han XG, Jiang Y. 2012. **Influences of land use history and short-term nitrogen addition on community structure in temperate grasslands.** J Arid Environ 87: 103-109. Available from: <http://dx.doi.org/10.1016/j.jaridenv.2012.07.008>

Zhang Y, Collins AL, Gooday RD. 2012. **Application of the FARMSCOPER tool for assessing agricultural diffuse pollution mitigation methods across the Hampshire Avon Demonstration Test Catchment, UK.** Environ Sci Policy 24(SI): 120-131. Available from: <http://dx.doi.org/10.1016/j.envsci.2012.08.003>

News

Perry A. **Drainage ditch research reveals opportunities for cleaning up runoff.** Agr Res 2013 Jan. Available from: <http://www.ars.usda.gov/is/AR/archive/jan13/ditch0113.htm>

Scherer C. **Agreement reached on Florida numeric nutrient criteria.** Ag Profess, 2013 Mar 20. Available from: <http://www.agprofessional.com/news/Agreement-reached-on-Florida-numeric-nutrient-criteria-199049601.html?ref=601>

For Bloomberg BNA subscribers (including EPA staff):

Chesapeake Bay: Final report on Chesapeake cleanup progress issued. Daily Environ Rep 2013 Mar 29. Available from: http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=30241912&vname=dennotallissues&

[wsn=502900000&searchid=20143467&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=0](http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=30204066&vname=dennotallissues&wsn=503192000&searchid=20143467&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=0)

Water pollution: More than half of rivers and streams in poor condition, draft EPA survey finds. Daily Environ Rep 2013 Mar 27. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=30038314&vname=dennotallissues&wsn=503456000&searchid=20143467&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=0

Water pollution: Report says climate change likely to complicate Baltic Sea cleanup efforts. Daily Environ Rep 2013 Mar 25. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=30005842&vname=dennotallissues&wsn=504318000&searchid=20143467&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Climate change: Canada, France to work on reducing greenhouse gas emissions using microalgae. Daily Environ Rep 2013 Mar 15. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29968079&vname=dennotallissues&wsn=504916000&searchid=20143467&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Air pollution: EPA final rule gives states additional time to install nitrogen monitors near roadways. Daily Environ Rep 2013 Mar 11. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29907510&vname=dennotallissues&wsn=505528000&searchid=20143467&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Water pollution: States say EPA complied with Water Act by deferring action on nutrient standards. Daily Environ Rep 2013 Mar 5. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29859860&vname=dennotallissues&wsn=505896000&searchid=20146945&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Air pollution: 2012 power plant sulfur, nitrogen emissions drop to lowest levels since air act amended. Daily Environ Rep 2013 Feb 28. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29831986&vname=dennotallissues&wsn=506230000&searchid=20146945&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Climate change: Canada aligns greenhouse gas standards for heavy-duty vehicles with U.S. version. Daily Environ Rep 2013 Feb 26. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29831986&vname=dennotallissues&wsn=506230000&searchid=20146945&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Water pollution: EPA may need to find new ways to protect U.S. waters from air deposition, GAO says. Daily Environ Rep 2013 Feb 26. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29831981&vname=dennotallissues&wsn=506266000&searchid=20146945&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Air pollution: EPA says substantial uncertainties prevented revisions to nitrogen, sulfur air standards. Daily Environ Rep 2013 Feb 21. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29770704&vname=dennotallissues&wsn=506656000&searchid=20146945&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Air pollution: Canadian inventory shows declines in air pollutants from industry during 2011. Daily Environ Rep 2013 Feb 19. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29746049&vname=dennotallissues&wsn=506932000&searchid=20146945&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Sustainability: Companies under pressure to assign value to environmental impacts, report says. Daily Environ Rep 2013 Feb 13. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29667695&vname=dennotallissues&wsn=507390000&searchid=20146945&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Water pollution: EPA Inspector General launches probe of effort to shrink Gulf 'dead zone'. Daily Environ Rep 2013 Feb 1. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29568974&vname=dennotallissues&wsn=508486000&searchid=20146945&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=1

Enforcement: Poland headed to EU court over nitrates pollution. Daily Environ Rep 2013 Jan 25. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29304238&vname=dennotallissues&wsn=509186000&searchid=20146945&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=2

Water pollution: EPA claims Clean Water Act discretion not to impose standards for state waters. Daily Environ Rep 2013 Jan 23. Available from:

http://esweb.bna.com/eslw/1245/split_display.adp?fedfid=29223956&vname=dennotallissues&wsn=509480000&searchid=20146945&doctypeid=2&type=date&mode=doc&split=0&scm=1245&pg=2

For Greenwire subscribers (including EPA staff):

Snider A. **Water pollution: More than half of U.S. waterways in poor health – EPA.** E&ENews PM 2013 Mar 26. Available from:
<http://www.eenews.net/eenewspm/2013/03/26/archive/2>

Petersen L. **Oceans: Manatee deaths call attention to rising tide of toxic algal blooms.** Greenwire 2013 Mar 26. Available from:
<http://www.eenews.net/Greenwire/2013/03/26/archive/8>

Snider A. **Mississippi River: Mayors, lawmakers unite around holistic approach to waterway's interests.** Environ & Energy Daily 2013 Mar 22. Available from:
<http://www.eenews.net/EEDaily/2013/03/22/archive/4>

Snider A. **Water pollution: Obama admin, Fla. reach 'historic agreement' on nutrient curbs; angry enviros slam deal, blame EPA.** E&ENews PM 2013 Mar 15. Available from:
<http://www.eenews.net/eenewspm/2013/03/15/archive/2>

Plautz J. **Air pollution: Emissions of NOx, SO2 from power plants lowest in 2 decades – EIA.** Greenwire 2013 Feb 27. Available from:
<http://www.eenews.net/Greenwire/2013/02/27/archive/5>

Narayanan N. **Emissions: Massive nitrogen pollution accompanies China's growth.** ClimateWire 2013 Feb 27. Available from:
<http://www.eenews.net/climatewire/2013/02/27/archive/3>

Jacobs JP. **Air pollution: EPA explains why it didn't tighten acid-rain standards.** E&ENews PM Feb 20. Available from: <http://www.eenews.net/eenewspm/2013/02/20/archive/1>

Perez I. **Agriculture: Learning to fight global warming, one crop at a time.** ClimateWire 2013 Feb 13. Available from: <http://www.eenews.net/climatewire/2013/02/13/archive/9>

Wildlife: Debate resolved -- earthworms do contribute to global warming. ClimateWire 2013 Feb 7. Available from: <http://www.eenews.net/climatewire/2013/02/07/archive/14>

Chesapeake Bay: Water quality still poor, but there's 'reason for hope' – EPA. Greenwire 2013 Feb 1. Available from: <http://www.eenews.net/Greenwire/2013/02/01/archive/9>

Forests: Small trees keep waterways healthy – scientists. Greenwire 2013 January 21. Available from: <http://www.eenews.net/Greenwire/2013/01/21/archive/12>

Peterka A. **Agriculture: Planting corn acres with biofuel crops reduces nutrient runoff – study.** Greenwire 2013 Jan 14. Available from:
<http://www.eenews.net/Greenwire/2013/01/14/archive/11>

Peterka A. **Water pollution: Efforts to address agricultural runoff fail to improve Iowa's lakes – study.** Greenwire 2013 Jan 11. Available from:
<http://www.eenews.net/Greenwire/2013/01/11/archive/23>

Reports

U.S. Environmental Protection Agency. 2012 Feb 28. **National rivers and streams assessment 2008–2009: a collaborative survey. Draft.** EPA/841/D-13/001. Washington, DC: U.S. Environmental Protection Agency Office of Wetlands, Oceans and Watersheds, Office of Research and Development. 110 p. Available from:
http://water.epa.gov/type/rsl/monitoring/riverssurvey/upload/NRSA0809_Report_Final_508Compliant_130228.pdf

Osmond DL, Meals DW, Hoag DLK, Arabi M, eds. 2012. **How to build better agricultural conservation programs to protect water quality: the National Institute of Food and Agriculture–Conservation Effects Assessment Project experience.** Ankeny, IA: Soil and Water Conservation Society. 387 p. Available from:
http://www.swcs.org/en/publications/building_better_agricultural_conservation_programs/

Federal Leadership Committee for the Chesapeake Bay. 2013 Mar 28. **Strategy for protecting and restoring the Chesapeake Bay watershed. Executive Order 13508 progress report.** Washington, DC: Federal Leadership Committee for the Chesapeake Bay. 45 p. Available from:
http://executiveorder.chesapeakebay.net/ChesBay_ProgReport_2012_Final.pdf.

United States Government Accountability Office. 2013 Jan. **Water quality: EPA faces challenges in addressing damage caused by airborne pollutants. Report to Congressional requesters.** GAO-13-39. Washington, DC: GAO. 53 p. Available from:
<http://www.gao.gov/assets/660/651522.pdf>

Chesapeake Bay Foundation. 2012. **2012 State of the Bay.** Washington, DC: Chesapeake Bay Foundation. 20 p. Available from: <http://www.cbf.org/about-the-bay/state-of-the-bay/2012-report>

Web Pages

Environment Canada. **National Pollutant Release Inventory online data search** [Internet]. Available from: http://ec.gc.ca/pdb/websol/emissions/ap/ap_query_e.cfm

European Commission Directorate-General for the Environment. **The Nitrates Directive** [Internet]. Available from: http://ec.europa.eu/environment/water/water-nitrates/index_en.html

GreenBiz.com. **State of green business report - 2013** [Internet]. Available for free download with registration from: <http://info.greenbiz.com/state-green-business-2013-get-report.html>